CLAIMS:

1. A distributed system which makes n computers, which are connected via a network, operate synchronously, and guarantees multiplexing of at least (n - f) computers,

each computer comprising:

an input candidate collection device configured to collect input data, which is selected as a next candidate to be processed by each of n computers, via the network;

a first input candidate selection control device configured to check, when said input candidate collection device has corrected not less than (n - f) input data, if the not less than (n - f) input data include not less than (n - f) input data having identical contents, and settle, when the not less than (n - f) input data include not less than (n - f) input data having identical contents, that input data as next data to be processed;

a second input candidate selection control device configured to check, when said first input candidate selection control device determines that the collected input data do not include not less than (n - f) input data having identical contents, if the collected data include input data which have identical contents and hold the majority of the number of collected input data, select, when the collected data include input data

which have identical contents and hold the majority of the number of collected input data, that input data as a self candidate, and make said input candidate collection device re-execute collection of input data after all input data of other candidates are discarded; and

a third input candidate selection control device configured to arbitrarily select, when said second input candidate selection control device determines that the collected data do not include input data which have identical contents and hold the majority of the number of collected input data, input data from the collected input data as a self candidate, and make said input candidate collection device re-execute collection of input data after all input data of other candidates are discarded.

2. A system according to claim 1, wherein f is a maximum integer which satisfies $3f < n$.

3. A system according to claim 1, wherein each computer further comprises:

a journal device configured to hold input data settled by said first input candidate selection control device;

a first input candidate adjustment control device configured to send, when another computer collects input data of a step that has already been settled in the self computer, input data held in said journal

device as settled input data; and

a second input candidate adjustment control device configured to settle, when settled input data is sent from another computer upon collecting input data by said input candidate collection device, that input data as next data to be processed.

4. A system according to claim 3, wherein said journal device holds the input data in an order from latest input data in correspondence with a predetermined number of steps,

said first input candidate adjustment control device includes an informing device configured to send, when said journal device does not hold settled input data to be sent to another computer, a message indicating this to the other computer, and

each computer further comprises:

a state holding device configured to hold immediately preceding states in steps already settled in the self computer in correspondence with a predetermined number of steps;

a state exchange device configured to exchange the immediately preceding state in each step held by said state holding device with another computer; and

a skip device configured to acquire, when a sum of the number of collected input data and the number of messages which are sent from other computers and indicate that settled input data is not held in said

journal device is not less than (n - f), and the number of collected input data is less than (n - f) upon collecting input data by said input candidate collection device, an immediately preceding state in the latest settled step in another computer, in which the settled step has most advanced among all other computers, via said state exchange device, and copy the acquired state to the self computer.

5. A system according to claim 1, wherein each computer further comprises:

a counter configured to count a virtual time used in a process of input data;

a first input data generation device configured to periodically generate first input data for giving an increment timing of a value of said counter;

a second input data generation device configured to store a system time of the self computer and generate second input data for giving a comparison timing between the system time and the virtual time counted by said counter; and

a virtual time adjustment device configured to compare the system time obtained from the second input data with the virtual time counted by said counter, and set, when the system time leads the virtual time, an increment width of the value of said counter upon processing the first input data to be large.

6. A multiplexing control method for a

distributed system which makes n computers, which are connected via a network, operate synchronously, and guarantees multiplexing of at least (n - f) computers,

each computer comprising:

the input candidate collection step of collecting input data, which is selected as a next candidate to be processed by each of n computers, via the network;

the first input candidate selection control step of checking, when the input candidate collection step has corrected not less than (n - f) input data, if the not less than (n - f) input data include not less than (n - f) input data having identical contents, and settle, when the not less than (n - f) input data include not less than (n - f) input data having identical contents, that input data as next data to be processed;

the second input candidate selection control step of checking, when it is determined in the first input candidate selection control step that the collected input data do not include not less than (n - f) input data having identical contents, if the collected data include input data which have identical contents and hold the majority of the number of collected input data, selecting, when the collected data include input data which have identical contents and hold the majority of the number of collected input data, that input data as a self candidate, and making the input candidate

collection step re-execute collection of input data after all input data of other candidates are discarded; and

the third input candidate selection control step of arbitrarily selecting, when it is determined in the second input candidate selection control step that the collected data do not include input data which have identical contents and hold the majority of the number of collected input data, input data from the collected input data as a self candidate, and making the input candidate collection step re-execute collection of input data after all input data of other candidates are discarded.

7. A method according to claim 6, wherein f is a maximum integer which satisfies $3f < n$.

8. A method according to claim 6, wherein each computer further comprises:

the journal step of holding input data settled in the first input candidate selection control step;

the first input candidate adjustment control step of sending, when another computer collects input data of a step that has already been settled in the self computer, input data held in the journal step as settled input data; and

the second input candidate adjustment control step of settling, when settled input data is sent from another computer upon collecting input data in the

input candidate collection step, that input data as next data to be processed.

9. A method according to claim 8, wherein the journal step includes the step of holding the input data in an order from latest input data in correspondence with a predetermined number of steps,

the first input candidate adjustment control device includes the informing step of sending, when settled input data to be sent to another computer is not held in the journal step, a message indicating this to the other computer, and

each computer further comprises:

the state holding step of holding immediately preceding states in steps already settled in the self computer in correspondence with a predetermined number of steps;

the state exchange step of exchanging the immediately preceding state in each step held in the state holding step with another computer; and

the skip step of acquiring, when a sum of the number of collected input data and the number of messages which are sent from other computers and indicate that settled input data is not held in the journal step is not less than (n - f), and the number of collected input data is less than (n - f) upon collecting input data in the input candidate collection step, an immediately preceding state in the latest

settled step in another computer, in which the settled step has most advanced among all other computers, via the state exchange step, and copying the acquired state to the self computer.

10. A method according to claim 6, wherein each computer further comprises:

the first input data generation step of periodically generating first input data for giving an increment timing of a value of a counter configured to count a virtual time used in a process of input data;

the second input data generation step of storing a system time of the self computer and generating second input data for giving a comparison timing between the system time and the virtual time counted by the counter; and

the virtual time adjustment step of comparing the system time obtained from the second input data with the virtual time counted by the counter, and setting, when the system time leads the virtual time, an increment width of the value of the counter upon processing the first input data to be large.